



Clock Monoclonal Antibody

Catalog No	YP-mAb-01612
Isotype	IgG
Reactivity	Human;Mouse;Rat
Applications	WB
Gene Name	CLOCK
Immunogen	The antiserum was produced against synthesized peptide derived from human Clock. AA range:241-290
Specificity	Clock Monoclonal Antibody detects endogenous levels of Clock protein.
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Source	Monoclonal, Mouse,IgG
Purification	The antibody was affinity-purified from mouse antiserum by affinity-chromatography using epitope-specific immunogen.
Dilution	WB 1:500-1:2000
Concentration	1 mg/ml
Purity	≥90%
Storage Stability	-20°C/1 year
Synonyms	bHLHe8;CLOCK;clock homolog (mouse);hCLOCK;KAT13D;KIAA0334;Circadian locomoter output cycles protein kaput;Class E basic helix-loop-helix protein 8
Observed Band	95kD
Calculated Molecular Weight	95kD
Cell Pathway	Nucleus . Cytoplasm . Cytoplasm, cytosol . Shuttling between the cytoplasm and the nucleus is under circadian regulation and is ARNTL/BMAL1-dependent. Phosphorylated form located in the nucleus while the nonphosphorylated form found only in the cytoplasm. Sequestered to the cytoplasm in the presence of ID2 (By similarity). Localizes to sites of DNA damage in a H2AX-independent manner. .
Tissue Specificity	Hair follicles (at protein level). Expressed in all tissues examined including spleen, thymus, prostate, testis, ovary, small intestine, colon, leukocytes, heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. Highest levels in testis and skeletal muscle. Low levels in thymus, lung and liver. Expressed in all brain regions with highest levels in cerebellum. Highly expressed in the suprachiasmatic nucleus (SCN).



Function

catalytic activity:Acetyl-CoA + histone = CoA + acetylhistone.,function:ARNTL/2-CLOCK heterodimers activate E-box element (3'-CACGTG-5') transcription of a number of proteins of the circadian clock. Activates transcription of PER1 and PER2. This transcription is inhibited in a feedback loop by PER and CRY proteins. Has intrinsic histone acetyltransferase activity and this enzymatic function contributes to chromatin-remodeling events implicated in circadian control of gene expression (By similarity). Acetylates primarily histones H3 and H4 (By similarity). Acetylates also a non-histone substrate: ARNTL., miscellaneous:CLOCK-ARNTL double mutations within the PAS domains result in synergistic desensitization to high levels of CRY on repression of CLOCK-ARNTL transcriptional activity of PER1 and disrupt circadian rhythmicity., PTM:Phosphorylation is dependent on CLOCK-ARNTL heterodimer format

Background

The protein encoded by this gene plays a central role in the regulation of circadian rhythms. The protein encodes a transcription factor of the basic helix-loop-helix (bHLH) family and contains DNA binding histone acetyltransferase activity. The encoded protein forms a heterodimer with ARNTL (BMAL1) that binds E-box enhancer elements upstream of Period (PER1, PER2, PER3) and Cryptochrome (CRY1, CRY2) genes and activates transcription of these genes. PER and CRY proteins heterodimerize and repress their own transcription by interacting in a feedback loop with CLOCK/ARNTL complexes. Polymorphisms in this gene may be associated with behavioral changes in certain populations and with obesity and metabolic syndrome. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Jan 2014],

matters needing attention

Avoid repeated freezing and thawing!

Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

Products Images

Western Blot analysis of various cells using Clock Monoclonal Antibody